Nota Lepi. **39**(1) 2016: 61–66 | DOI 10.3897/nl.39.8559

Alucitidae (Lepidoptera), a new family for the Mongolian fauna

Petr Ustjuzhanin[1], Vasiliy Kovtunovich[2], Roman Yakovlev[1,3]

1 *Altai State University, Lenina 61, Barnaul, 656049, Russia; petrust@mail.ru*
2 *Moscow Society of Nature Explorers. Home address: Malaya Filevskaya str., 24/1, app. 20, Russia, 121433; vasko-69@mail.ru*
3 *Tomsk State University, Laboratory of Biodiversity and Ecology, Tomsk, Lenina 31 (RUS-634050), Russia; yakovlev_asu@mail.ru; yakovlevcossidae@gmail.com*

http://zoobank.org/6FB78B5B-131F-45D2-896D-3C6886239F7C

Received 20 March 2016; accepted 13 April 2016; published: 13 May 2016
Subject Editor: Bernard Landry.

Abstract. Lepidoptera family Alucitidae is reported for the first time for the fauna of Mongolia. *Alucita helena* Ustjuzhanin, 1993 was discovered in West Mongolia in the ranges of the Dzun-Dzhargalant-Khairkhan.

Introduction

The Lepidoptera fauna of Mongolia in general, and that of the Mongolian Altai in particular, is still poorly known. There are relatively detailed records available for the Papilionoidea (Tshikolovets et al. 2009; Yakovlev 2012), Sphingidae (Derzhavets 1977; Yakovlev et al. 2015), Zygaenidae (Efetov et al. 2012), Cossidae (Yakovlev 2004, 2015), Notodontidae (Schintlmeister 2008), *Eupithecia* (Geometridae) (Mironov and Galsworthy 2014), and Pterophoridae (Ustjuzhanin and Kovtunovich 2008). There were no detailed records for other lepidopteran taxa currently available.

Much new information was obtained on the distribution and systematics of Lepidoptera of Mongolia during expeditions by entomologists and botanists from the Altai State University (Barnaul, Russia) starting in 1999. These studies were concentrated in the territory of West Mongolia, primarily in the Mongolian Altai Mountains (aimaks Bayan-Ulegei, Khovd and Gobi-Altai). During the expedition of 2015 in the ranges of Dzun-Dzhargalant-Khairkhan, a large series of *Alucita helena* Ustjuzhanin, 1993 of the family Alucitidae (Lepidoptera) was collected. This species is a new family record for Mongolia. The "many-plumed moths" of the world include 216 species (van Nieukerken et al. 2011).

Material and methods

Adult Alucitidae were collected using a combination of a Philips–250 W lamp mounted above a fabric screen and battery-powered light traps using TL 8W/05 lamps. Chloroform was used as a killing agent. The collected material is deposited in the private collection of the first and second authors.

Results

Alucita helena Ustjuzhanin, 1993

Figs 1–5

Alucita helena Ustjuzhanin, 1993: 83. Type locality: Russia, Altai Republic, Ongudai District, village of Inya.

Material examined. 112 ex. from Western Mongolia, Khovd Aimak, Dzun-Dzhargalant-Khairkhan, Ar-Shatyn-Gol River, N47°44' / E92°27', 2100 m, 26.vi.2015., leg. R. Yakovlev.

Notes. In addition to the type locality, specimens of *A. helena* were examined from the Republic of Altai (Ongudai District, near B. Yaloman village; Kosh-Agach District, 15 km up from Beltir village, Chagan River; Kosh-Agach District, 15 km E Kokorya; Ust-Kan District, Shiverta River Valley, 5 km SW of Beshozek village; Ulagan District, 10 km NW of Aktash village, Chuya road) (Fig. 4). Probably larvae of this species are associated with *Lonicera* (Caprifoliaceae) (Zagulajev 1986). There are two generations with adults of the first flying in June and those of the second in August. The adults of the second generation are larger and darker than those of the first.

Figure 1. *Alucita helena* Ustjuzhanin, 1993. Adult male, Mongolia.

Figure 2. Male genitalia of *Alucita helena*.

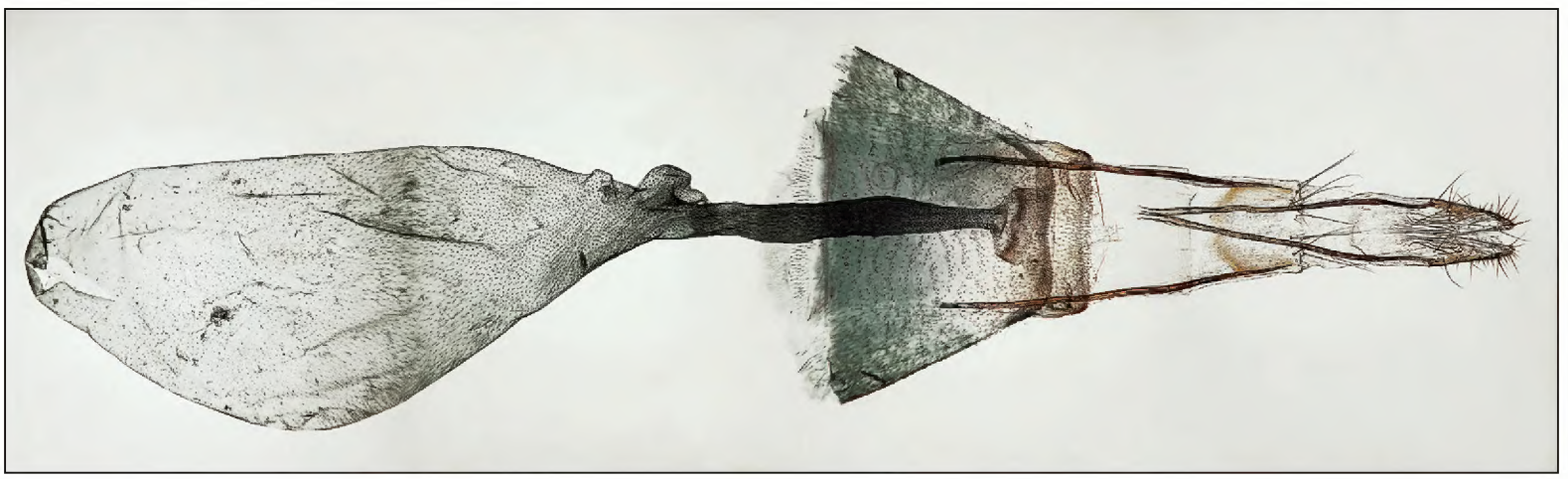

Figure 3. Female genitalia of *Alucita helena*.

Figure 4. Distribution of *Alucita helena*.

Figure 5. Biotope at collecting locality of *Alucita helena* in Mongolia.

Specimens were collected in Mongolia at Khar Us Nuur National Park, Dzhargalant-Khairkhan Ridge (Fig. 5). The 850 000 ha park is located 45 km southeast of the center of Khovd Aimak. In the central portion of the park there are lakes Khar Us, Khar, and Durgun. The park includes the Chono Kharaih River and the eastern spurs of Dzhargalant-Khairkhan.

According to the new botanical-geographical zonation scheme for Mongolia (Kamelin 2010), the Dzhargalant-Khairkhan Ridge is located in the boreal region, steppe subregion of the Tuva-Mongolian Province, Khovd District. The eastern macroslope of the ridge borders the Lacustrine-Basin District and in the South the Shargyn Gobi exclave of the Gobi Subregion. The predominant type of the ridge vegetation is steppe with dry and desert areas reaching 3000 m.a.s.l. The extent of desert plant species in this steppe is not great, in contrast to the Shargyn Gobi exclave steppe where they predominate. In the foothills and middle mountains of Dzhargalant-Khairkhan, the desert steppe is widespread. Steppe plants occupy plains and slopes of the mountains at the altitudes of 1700 (2100)–2250 (2300) m.a.s.l. (Karamysheva et al. 1984). A petrophyte vegetation has developed on the steep slopes of the ridge while a vegetation of rocky substrates occurs on the ravine bottoms and in valleys (Pyak 2006). Poplar forests of *Populus laurifolia* Ledeb. (Salicaceae) and the shrub *Lonicera microphylla* Willd. Ex. Schult. (Caprifoliaceae) grow on rocky substrates along the river valleys. *Salix ledebouriana* Trautv. (Salicaceae) and *Rhodiola krylovii* A.V. Polozii & N.V. Revyakina (Crassulaceae) occur in narrow gorges. The highland ridge belt is occupied by the kobresia and kobresia-sedge alpine heathlands and the cryophilic meadow-steppe where *Papaver pseudotenellum* Grubov (Papaveraceae), *Pulsatilla bungeana* C. A. Mey ex. Ledeb. (Ranunculaceae) and *Pedicularis achilleifolia* Stephan ex. Willd. (Orobanchaceae) occur. During the field work in the National Park over 100 Lepidoptera species were collected. The material is being studied and results will be published later.

Conclusion

The composition of the Lepidoptera fauna of the Mongolian Altai appears rich and the discovery of a new family in this region clearly indicates that other interesting taxa will be discovered. Also of interest is the relative disjunction of the Mongolian population of *A. helena* from other known localities for the species (Fig. 4).

Acknowledgments

We are grateful to A.I. Shmakov, A. Kechaikin, I. Evdokimov, V. Doroshkin, A. Cherepanov and U. Beket for their assistance in organizing the expedition; to P.A. Kosachev (Barnaul) for his help during the trip, the clarification on the willow species affiliation, and a detailed description of the vegetation in the mountains Dzhargalant-Khairkhan; and to A.K. Ustjuzhanina (Tomsk) for the translation of the article into English. The English text was corrected by Prof. Boris Kondratieff (Fort Collins, CO, USA).

References

Derzhavets YA (1977) Hawkmoths (Lepidoptera, Sphingidae) of Mongolia. Nasekomye Mongolii 5: 642–648. [In Russian]

Efetov KA, Gorbunov OG, Tarmann GM (2012) Zygaenidae of Mongolia (Lepidoptera). Nachrichten des Entomologischen Vereins Apollo 32: 159–164.

Kamelin RV (2010) Mongolia on the map of the phytogeographical division of Palaeoarctics Turczaninowia 13(3): 5–11. [In Russian]

Karamysheva ZV, Buyan-Orshikh Kh, Beket U, Sumerina IYu (1984) Vegetation of Dzhargalan-Ula. Izvestia AN MNR 3: 44–56. [In Mongolian]

Mironov V, Galsworthy A (2014) A survey of *Eupithecia* Curtis, 1825 (Lepidoptera, Geometridae, Larentiinae) in Mongolia with descriptions of two new species. Zootaxa 3774(2): 101–130. doi: 10.11646/zootaxa.3774.2.1

van Nieukerken EJ, Kaila L, Kitching IJ, Kristensen NP, Lees DC, Minet J, Mitter C, Mutanen M, Regier JC, Simonsen TJ, Wahlberg N, Yen S-H, Zahiri R, Adamski D, Baixeras J, Bartsch D, Bengtsson BÅ, Brown JW, Bucheli SR, Davis DR, De Prins J, De Prins W, Epstein ME, Gentili-Poole P, Gielis C, Hättenschwiler P, Hausmann A, Holloway JD, Kallies A, Karsholt O, Kawahara A, Koster JC, Kozlov MV, Lafontaine JD, Lamas G, Landry J-F, Lee S, Nuss M, Park K-T, Penz C, Rota J, Schmidt BC, Schintlmeister A, Sohn JC, Solis MA, Tarmann GM, Warren AD, Weller S, Yakovlev RV, Zolotuhin VV, Zwick A (2011) Order Lepidoptera Linnaeus, 1758. In: Zhang Z-Q (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. Zootaxa 3148: 212–221.

Pyak AI (2006) About species of genus *Lagopsis* Bunge on the Altai. Systematicheskie zametki po materialam gerbariya im. P.N. Krylova pri Tomskom Gosudarstvennom Universitete 96: 1–9. [In Russian]

Schintlmeister A (2008) Palaearctic Macrolepidoptera. Vol. 1. Notodontidae. Apollo-Book, Stenstrup, 482 pp.

Tshikolovets V, Yakovlev R, Kosterin O (2009) The Butterflies of Mongolia. Tshikolovets-Press, Kyiv-Pardubice, 320 pp.

Ustjuzhanin PYa (1993) A new Alucitid moth species from Montane Altai and South-East Kazakhstan (Lepidoptera, Alucitidae). Vestnik Zoologii 4: 83–85. [In Russian]

Ustjuzhanin PYa, Kovtunovich VN (2008) Fauna of plume moths (Lepidoptera, Pterophoridae) of Mongolia. Altai zoological journal 2: 34–46.

Yakovlev RV (2004) Carpenter-moths (Lepidoptera, Cossidae) of Mongolia. Euroasian Entomological Journal 3(3): 217–224.

Yakovlev RV (2012) Checklist of Butterflies (Papilionoidea) of the Mongolian Altai Mountains, including descriptions of new taxa. Nota Lepidopterologica 35(1): 51–96.

Yakovlev RV (2015) The Cossidae (Lepidoptera) of Mongolia. Check List 11(5): 1–10. doi: 10.15560/11.5.1736

Yakovlev RV, Guskova EV, Doroshkin VV, Titov SV (2015) Sphingidae of the Mongolian Altai (Lepidoptera: Sphingidae). SHILAP Revista de lepidopterologia 43(171): 467–478.

Zagulajev AK (1986) [The family Alucitidae – the many-plumed moths] – Opredelitel' Nasekomykh Evropeyskoy Chasti SSSR. Vol. 4. Cheshuekrylye, Part. 3, Leningrad, 215–228. [In Russian]